



## TMINM: NAVAL HYGIENE IN THE AGE OF EPIDEMICS

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The Navy's South Atlantic Squadron arrived in Rio de Janeiro in 1894 just as a deadly disease epidemic hit the city. To protect the crews, the shipboard surgeons—immersed in the principles of naval hygiene—issued a series of strict sanitary guidelines. For months the Squadron remained in port and yet almost entirely free of disease. Commodore J. Rufus Tryon, the Surgeon General of the Navy, lauded it as triumph for Navy Medicine and advocated using these sanitary measures to develop Navy-wide guidance. Three years later Tryon got his wish. On April 8, 1897, the U.S. Navy released these guidelines as Navy General Instructions (for Sanitation), the first fleet-wide guidance on protecting shipboard crews during outbreaks of infectious disease. These measures included:

- Restriction of liberty onshore and total deprivation of leave
- Rigid quarantine
- Prompt removal of infected patients from ships
- Isolation of patients who may be infected
- Strict enforcement of personal hygiene and “special precautions” that may prevent the spread of the disease
- And disinfection of contaminated articles

Although the U.S. Navy was still limited in treatment options for those suffering from cholera, dysentery, influenza, typhoid, tuberculosis, and yellow fever—the leading causes of death by disease in the U.S. Navy during the 1890s—this guidance represented a significant hallmark in the history of medicine and progress in the prevention against disease.

### Foundations for Preventive Medicine

Many of the Navy medical practitioners of the 1890s had come to age when bacteriology and public health were beginning to reshape medicine's understanding of disease and the means of prevention. Naval hygiene was every bit an offshoot of this movement and was specifically tailored to the issues of the fleet. The disciples of naval hygiene (sometimes referred to as naval hygienists) sought to improve ship sick-bays, berthing spaces, ventilation, lighting, heating, means of obtaining distilled water, better refrigeration for food and protecting shipboard crews and landing parties when visiting “unhealthy localities.”

Naval hygienists also placed an emphasis on the laboratory sciences and in the 1870s this became a requirement for all those seeking medical commissions in the Navy. On February 1, 1878, Navy Surgeon General William Grier authorized the formation of the “Laboratory School of Instruction” (AKA, the Department of Instruction) at Naval Hospital Brooklyn, N.Y. The curriculum consisted of an intensive regimen of lectures and laboratory work covering the fields of recruit medicine, optics and microscopy, chemistry and chemical analyses, Navy regulations and procedures, and hygiene. Students were offered an opportunity to inspect naval vessels at the nearby shipyard for “cleanliness,” and ventilation and were encouraged to attend clinics at local civilian hospitals to improve their skills.



In Washington, D.C., the Bureau of Medicine and Surgery (BUMED) founded an educational center in 1882, for exhibiting a collection of “instruments, appliances, inventions, and designs relating to, and illustrating, the progress of sanitary science in its application to the exigencies of naval life.” This “Naval Museum of

Hygiene” also housed a laboratory for investigating hygiene-related issues. And in May 1902, it became the new home of the laboratory school, or as it was now known, the U.S. Naval Medical School. Over the next decades, the Naval Medical School was the first stop for newly commissioned physicians in the Navy and all were required to undergo rudimentary course work in bacteriology, chemistry, preventive medicine and hygiene, and epidemiology and sanitation—the very tools needed for diagnosis, treating and understanding disease. Classes were led by some of the pre-eminent scientists of the day including Dr. Edward R. Stitt of the U.S. Navy as well as Drs. Charles Wardell Stiles and Milton Rosenau, both of the Marine Health Service (Public Health Service).

In the first decades of the twentieth century, the school’s graduates went on to vaccinate the native populations of American Samoa and Guam against smallpox; help develop and administer anti-typhoid vaccinations ultimately stamping out the disease in the Navy and Marine Corps; partake in a host of international relief efforts on multiple continents; explore new treatment options for infectious and tropical diseases; and help further develop the field of preventive medicine.



### **Preventive Medicine in the Influenza Pandemic**

In the first years of the twentieth century diseases like tuberculosis and typhoid were among the leading causes of death in the U.S. Navy. Their mortality rates, however, do not compare to the sheer devastation caused by the Great Influenza Pandemic of 1918. From 1918 to 1919, some 40 percent of Navy and Marine Corps personnel were infected by the pandemic influenza. In 1918 alone, there were 121,225 cases of influenza in Navy and Marine Corps (accounting for 30 percent of all admissions). Of this number, 4,158 died (44 percent of all deaths). With limited treatment options existing at the time, Navy Medicine chief weapon in the fight was preventive medicine.

Even before the advent of the pandemic the rapid expansion of the service in World War I proved a test for Navy Medicine. Contagious disease outbreaks were rife at training stations across the country. To control and track these outbreaks BUMED established the Division of Sanitation (later known as the Division of Preventive Medicine) in 1917. Comprised of Navy medical and Public Health Service personnel, the division was responsible for collecting and compiling morbidity and mortality statistics; overseeing the prevention and control of communicable diseases; conducting epidemiological studies; studying sanitary conditions and recommending improvements when necessary; and disseminating information to naval medical personnel.

At the height of the pandemic, the BUMED Division of Sanitation released weekly bulletins to the fleet warning of the dangers of overcrowding, sharing drinking cups, “promiscuous spitting” and advised personnel to wash hands frequently and “before every meal.” Prevention of the contagion was by far the best available medicine at the time and also was motivation for the release of BUMED Circular No. 1 on September 26, 1918 which included the following recommendations:

- Reduce stress, get your sleep and “do not get hysterical over the epidemic”
- “Beware of those who are coughing and sneezing”
- Avoid crowds—avoid crowded street cars, theaters, “moving-picture shows and other places of public assembly”
- “Avoid close, stuffy and poorly ventilated rooms”
- “Secure at least seven hours of sleep”
- “Do not travel by railroad unless absolutely necessary”

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Today, it is easy to think we are living in uncharted times. Although COVID-19 has introduced new challenges on a different scale, history offers a great many examples of epidemics that have decimated populations on grander scales (Cholera of the mid-19<sup>th</sup> century, Great Influenza of 1918 and the Justinian Plague of the 6<sup>th</sup> century among them). Because of the advances of science, and with it preventive medicine, life today comes with certain expectations for living that just did not exist in earlier times. News and understanding of contagion has certainly developed over time, but history proves that some sound practices—regardless of the era—can remain universal.

#### **Sources:**



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